

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>680-051PCT</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/US2004/003481</b>	International filing date ( <i>day/month/year</i> ) <b>06 February 2004 (06.02.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>10 February 2003 (10.02.2003) ]</b>
International Patent Classification (IPC) or national classification and IPC <b><sup>7</sup> H04L 12/56</b>		
Applicant <b>CONEXANT SYSTEMS, INC.</b>		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*. 1(a).

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input checked="" type="checkbox"/> | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input checked="" type="checkbox"/> | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report <b>12 August 2005 (12.08.2005)</b>
Facsimile No. +41 22 740 14 35	Authorized officer <div style="text-align: center; font-weight: bold; margin: 5px 0;">                     Agnes Wittmann-Regis                 </div> Telephone No. +41 22 338 89 70

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 23 NOV 2004

WIP PCT PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2004/003481

International filing date (day/month/year)  
06.02.2004

Priority date (day/month/year)  
10.02.2003

International Patent Classification (IPC) or both national classification and IPC  
H04L12/56

Applicant  
GLOBESPAN VIRATA, INC.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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D-10958 Berlin  
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US2004/003481

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:

- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ not paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

- ☐ complied with
- ☒ not complied with for the following reasons:

**see separate sheet**

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-4

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	3
	No: Claims	1,2,4
Inventive step (IS)	Yes: Claims	
	No: Claims	1-4
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item IV**

**Lack of unity of invention**

1. claims: 1-4

Orthogonal frequency division multiplexing

2. claims: 5-9

Queuing based on the latency time between the layers

3. claims 10-16

Adaptation of the transmitting rate within one frame

4. claims 17-20

Queuing based on the class of service

For the following reasoning, the prior art document D1=EP0594356 is taken into account.

From this prior art document is known:

A method comprising:

storing a description of a first frame wherein said description comprises:

(1) a frame length; (col. 4 line 56 - col. 5 line 2)

(2) a first transmission rate; (col. 3 lines 1-12)

receiving a first portion of said first frame wherein the length of said first portion is less than said frame length and is based on said first transmission rate.; (col. 3 lines 35-37)

queuing said first portion of said frame; (col. 3 lines 40-43)

transmitting said first portion of said first frame at said first transmission rate into shared communication channel; (col. 4 lines 25 - 37)

receiving a second portion of said first frame after said transmission of said first portion has started. (col. 4 lines 48 - 51)[claim 1]

Furthermore, D1 discloses: Wherein said description further comprises a second transmission rate at least one form of modulation. (col. 3 lines 8 - 12) [claim 2]

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

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The STF (Special Technical Feature) of subject 1, as defined in Rule 13(2) PCT, therefore is:

-Wherein said at least one of modulation comprises orthogonal frequency division multiplexing.

From the above, the objective problem can be formulated as how to provide the maximum separation between transmitted symbols. [claim 3]

The potential STF's of subject 2, not known from the above mentioned prior art, is that of:

queuing said first portion of said frame wherein the size of said queue is based on said first transmission rate and the time required to receive said first portion.

The objective problem to be solved by claims 5-9 could be said to be queuing of the data frames taking into account the latency time.

The potential STF's of subject 3, not known from the above mentioned prior art, is that of:

queuing a first portion of a second frame wherein the length of said first portion is base on said first transmission rate;  
transmitting said first portion of said second frame at said second transmission rate.

The objective problem to be solved by claims 10-16 could be said to be enabling a conversion of transmitting rate within a frame.

~~The potential STF's of subject 4, not known from the above mentioned prior art, is that of:~~

Storing a first description of a first frame wherein a first description comprises:  
(3) a first class of service with which first frame is associated;

The objective problem to be solved by claims 17-20 could be said to be enabling queuing based on class of service.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

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On the face of it, there are no technical features in the claimed invention, which can be seen as common or corresponding STF within the meaning of Rule 13(2) PCT. Moreover, the problems solved are different and not related.

In conclusion, therefore, the four groups of claims are not linked by common or corresponding special technical features and define four different inventions not linked by a single general inventive concept.

The application, hence does not meet the requirements of Unity of Invention as defined in Rule 13(1) & (2) PCT.

Hence the International Examination Authority considers that the following separate inventions or groups of inventions are not so linked as to form a single general inventive concept:

- 1 claims 1-4
- 2 claims 5-9
- 3 claims 10-16
- 4 claims 17-20

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

D1: EP-A-0 594 356 (AMERICAN TELEPHONE & TELEGRAPH) 27 April 1994 (1994-04-27)

D2: EP-A-0 998 069 (INMARSAT LTD) 3 May 2000 (2000-05-03)

- 1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 2 and 4 is not new in the sense of Article 33(2) PCT.

- 1.1 The document D1 discloses (the references in parentheses applying to this



document):

A method comprising:

storing a description of a first frame wherein said description comprises:

- (1) a frame length; (col. 4 line 56 - col. 5 line 2)
- (2) a first transmission rate; (col. 3 lines 1-12)

receiving a first portion of said first frame wherein the length of said first portion is less than said frame length and is based on said first transmission rate.; (col. 3 lines 35-37)

queuing said first portion of said frame; (col. 3 lines 40-43)

transmitting said first portion of said first frame at said first transmission rate into shared communication channel; (col. 4 lines 25 - 37)

receiving a second portion of said first frame after said transmission of said first portion has started. (col. 4 lines 48 - 51)**[claim 1]**

The independent claim 1 is therefore not new.

- 1.2 Furthermore, D1 discloses:  
(col. 3 lines 8 - 12) **[claim 2]**  
(col. 5 lines 1-21) **[claim 4]**

Therefore, the dependent claims 2 and 4 are also not new.

- 2 Dependent claim 3 does not contain any features which, in combination with the features of any claim to which it refers, meet the requirements of the PCT in respect of inventive step.

- ~~2.1 The feature "one form of modulation comprises orthogonal frequency division multiplexing" is described in document D2 as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include this feature in document D1 in order to solve the problem of how to provide the maximum separation between transmitted symbols.~~